INDIANA
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NEWSLETTER

Indiana State Department of Health

Epidemiology Resource Center
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Aseptic Meningitis: Case Definition, 2005

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Reporting Aseptic Meningitis

The Communicable Disease Reporting Rule for Physicians, Hospitals, and Laboratories (410 IAC 1-2.3, Section 84) indicates that aseptic meningitis must be reported within 72 hours of diagnosis. Viruses are the most common etiology, with enteroviruses accounting for over half of the cases reported. Early etiologic diagnosis of aseptic meningitis helps to avoid unnecessary antibiotic treatment and additional testing.

When completing the Indiana State Department of Health (ISDH) Aseptic Meningitis Case Investigation Form, the investigator needs to have an understanding of the laboratory results when determining the classification. Some individuals may not have been hospitalized or have received diagnostic procedures to make a definitive diagnosis of aseptic meningitis. Thus, the ISDH case definition allows for further case classification, such as probable, suspect, and not a case. Few changes have been made from the previous case definition of aseptic meningitis. The following offers the definition of medical terms, exclusion criteria, and the criteria needed to define the case.

Definition of Terminology

CSF – Cerebral Spinal Fluid

CSF WBC – The number of white blood cells seen in the CSF. The CSF WBC is only valid if the tap was NOT traumatic (see below).

Lymphocytes predominate – At least half (50%) of CSF WBC are mononuclear (lymphocytes).

Polys – Polymorphonuclear neutrophils (PMN)

Meningeal symptoms – If any two of the following are present, the patient is considered to be symptomatic:

- Fever
- Photophobia (sensitivity to light)
- Stiff neck

Traumatic tap – A lumbar puncture or spinal tap in which bleeding into the specimen causes distortion of laboratory findings. The presence of large numbers of red blood cells (RBC) in a CSF specimen is often indicative of a traumatic tap. When RBC exceeds WBC by more than 500:1, WBC results should be considered invalid.

Virus identified – Viruses may be identified by culture, by polymerase chain reaction (PCR). or by serology (detection of antibody or antigen with a 4-fold or greater rise in titer between acute and convalescent tests). It is important to differentiate if the virus was identified in CSF or from some other part of the body.

Exclusionary Criteria

If any of the following criteria are present, the patient is NOT classified as a case of aseptic meningitis:

- Diagnosed as bacterial, fungal, or other non-viral meningitis by physician
- Bacteria, fungi, or other non-viral organism isolated from the CSF
- Bacteria, fungi, or other non-viral organism identified on stain of CSF
- Bacterial, fungal, or other non-viral antigens, antibody (including VDRL), or DNA is detected in CSF
- If a virus is NOT identified in the CSF, and any of the following are present, the patient is NOT classified as a case of aseptic meningitis:
    - CSF WBC less than 5
    - CSF glucose less than 40
    - CSF protein less than 15

Confirmed Case

Any of the following:

- Virus identified in CSF
- Meningeal symptoms present, CSF WBC greater than 5 and lymphocytes predominate

Probable Case

Any of the following:

- Meningeal symptoms present, CSF WBC greater than 5, CSF protein greater than 45
- Meningeal symptoms present, report specifically says no bacterial growth from CSF and no CSF WBC report available
- Diagnosed by physician as aseptic meningitis, meningeal symptoms present, CSF WBC greater than 5 and report specifically says no bacterial growth from CSF
- Diagnosed by physician as aseptic meningitis, no mention is made of the presence or absence of meningeal symptoms, CSF WBC greater than 5 and report specifically says no bacterial growth from CSF

Suspect Case

Any of the following:

- Diagnosed by physician as aseptic meningitis and no further information provided
- Meningeal symptoms present, no CSF report available
- Diagnosed by physician as aseptic meningitis, no mention is made of the presence or absence of meningeal symptoms, CSF WBC greater than 5

Communicable Disease Exposure Notification for Emergency Care Providers

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Public Law 212-2003 made changes to Indiana Code 16-41-10, Communicable Disease Exposure Notification for Emergency Care Providers. The law was enhanced to ensure that emergency medical service providers receive appropriate medical evaluation after an exposure to blood or body fluids of a type that has been demonstrated epidemiologically to transmit dangerous communicable diseases.

As a result of the new changes in the law, the ISDH has updated information and developed a form, available since September 2003, for emergency medical service providers to complete following an exposure to blood or body fluids. (This information can be found at

http://www.in.gov/isdh/form/information.htm.) From September 2003-July 2005, emergency medical service providers have reported 64 exposures using this form.

Figure 1 shows location of the reported exposure to blood or body fluids. The majority of exposures occurred at the incident site.

Figure 1.

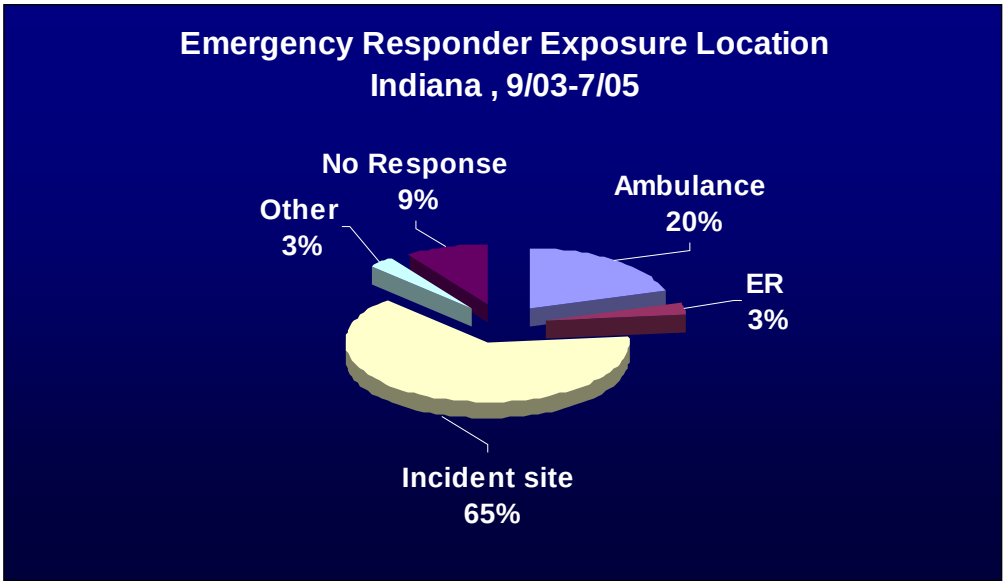
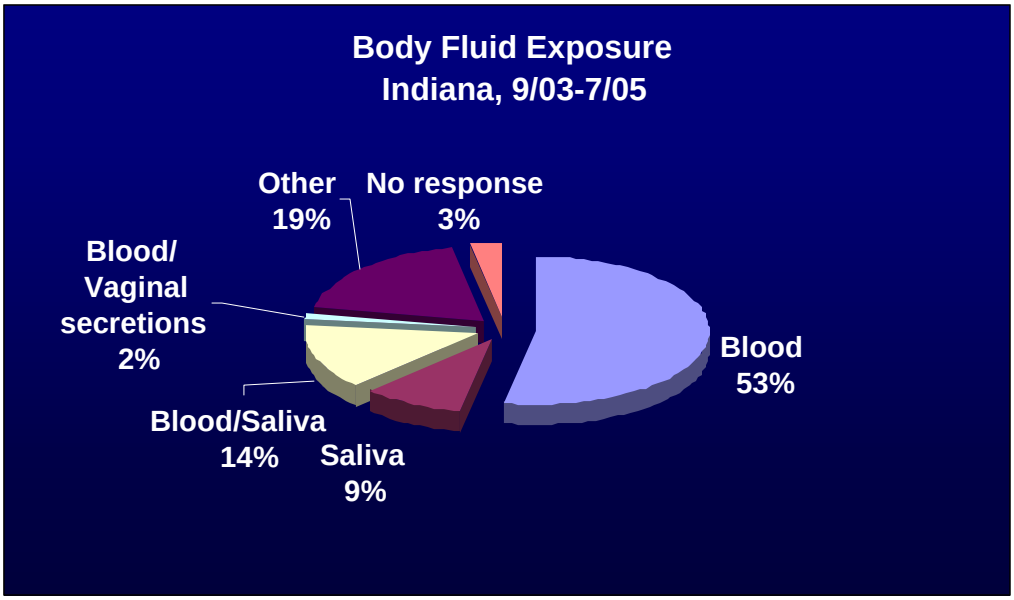


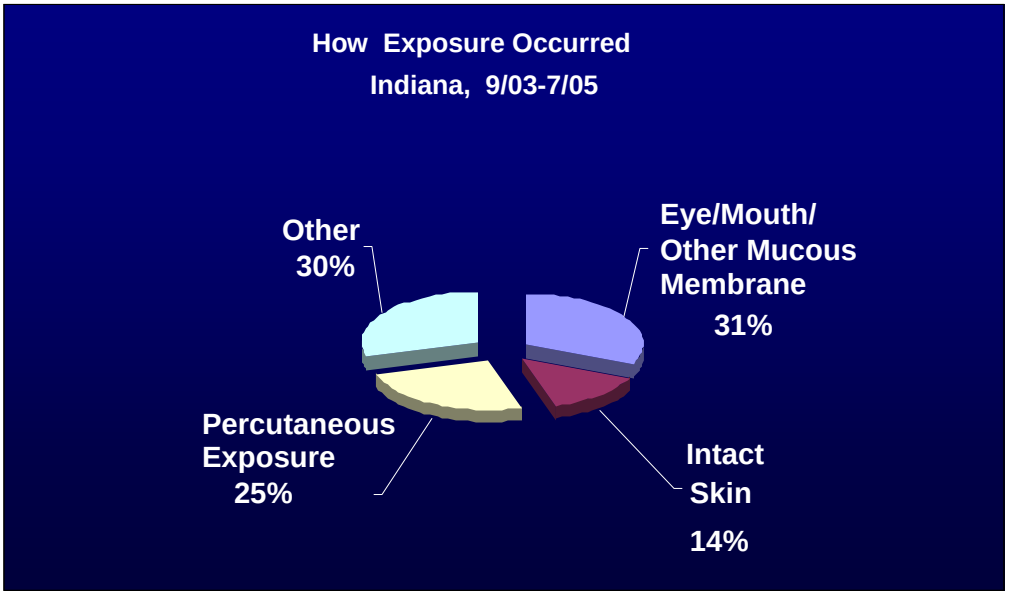
Figure 2 shows that emergency medical service providers were more likely to be exposed to blood than to any other body fluid.

Figure 2.



The emergency medical service providers were most likely to be exposed to blood or body fluids via the eye, mouth, or other mucous membranes (see Figure 3). Twenty-five percent of those emergency medical service providers reporting indicated percutaneous exposure. Fourteen percent indicated blood or body fluid exposure to intact skin. However, intact skin would not meet the definition of exposure since this exposure is not a type that has been demonstrated epidemiologically to transmit dangerous communicable diseases. Transmission of disease when intact skin is exposed to blood is very rare.

Figure 3.



Indiana State Department of Health (ISDH) Policy For Testing of *Staphylococcus* Isolates with Reduced Susceptibility to Vancomycin

Background

In 2004, the Centers for Disease Control and Prevention (CDC) sent the following guidance to the ISDH:

> Since *S. aureus* is a common pathogen, CDC is interested in characterizing both VISA (vancomycin intermediate) and VRSA (vancomycin resistant) isolates as well as understanding the epidemiology of such isolates. *S. aureus* with reduced susceptibility to vancomycin (i.e., minimum inhibitory concentration (MIC) >= 4µg/ml) should be reported to a public health authority and sent to CDC.

Coagulase-negative *Staphylococcus* species (CoNS) with intermediate resistance to vancomycin also occur, and these isolates can be clinically significant. However, they have less public health concern because CoNS is less frequently associated with clinical disease and some species of CoNS, such as *S. haemolyticus*, naturally have high vancomycin MICs. It should be noted that vancomycin resistant CoNS (i.e., MIC>= 32 µg/ml) are highly unusual, and such isolates may contain a Van gene from *Enterococcus*. CDC is interested in receiving vancomycin resistant CoNS with a MIC>= 32 µg/ml.

The recommendations that CDC shared with ISDH regarding *Staphylococcus* isolates that have an elevated MIC are as follows:

- Recheck the isolate identification.
- Recheck the vancomycin MIC, if possible use a non-automated method.
- If the isolate is a *S. aureus* and the vancomycin MIC is >= 4µg/ml, notify your local (state) public health department.
- If the isolate is a CoNS and the vancomycin MIC >= 16 µg/ml, you may wish to notify your local (state) public health department.
- If the isolate is a CoNS and the vancomycin MIC <= 16 µg/ml, the isolate does not need to be reported or sent to a public health authority. However, a laboratory may wish to have susceptibility confirmed by a public health authority if the isolate is clearly associated with clinical disease (e.g., isolated multiple times from a sterile body site and the patient has experienced prolonged vancomycin therapy).

Policy: Vancomycin-Intermediate/Resistant *Staphylococcus aureus* (VISA/VRSA)

The current ISDH policy regarding **Vancomycin-Intermediate/Resistant *Staphylococcus aureus*** (VISA/VRSA) is as follows:

Laboratories are asked to follow current CDC guidelines found at: http://www.cdc.gov/ncidod/hip/ARESIST/visa_vrsa_guide.pdf. The CDC recommends the following when performing automated susceptibility testing of *S. aureus* strains, particularly methicillin-resistant *S. aureus*: **Laboratories should include a vancomycin-agar screening plate containing 6 µg/ml of vancomycin and examine the plate for growth after 24-hour incubation.**

Any *S. aureus* isolate with a vancomycin minimum inhibitory concentration (MIC) >= 4µg/ml should be saved and sent to the ISDH Laboratories for confirmation. The ISDH will perform an E-test. The ISDH Laboratories will forward any isolate with a confirmed MIC >= 4µg/mL to CDC for further testing. Currently, the Indiana Communicable Disease Reporting Rule for Physicians, Hospitals, and Laboratories (410 IAC 1-2.3) requires that isolates of *S. aureus*, vancomycin resistance >= 8µg/ml be submitted to the ISDH Laboratories.

The ISDH Laboratories shall send test results to the Epidemiology Resource Center (ERC). The ERC is responsible for disseminating the results to the submitting laboratory. ISDH Laboratories staff shall review the completed form prior to ERC disseminating the testing results. The submitting laboratory will be requested to provide the submitting physician the results. The ERC staff may also be in contact with the submitting physician, infection control practitioners, local health department staff, or any health professional involved in the follow-up of the patient.

Policy: Vancomycin Intermediate CoNS

The ISDH Laboratories will not accept isolates of CoNS with vancomycin MIC <=16 µg/ml for testing unless the isolate is clearly associated with clinical disease. Clinical data must be made available whenever a CoNS with a vancomycin MIC <= 16 µg/ml is sent to the ISDH for testing. The CoNS must be isolated multiple times from a sterile body site **and** the patient must have experienced prolonged vancomycin therapy.

Policy: Vancomycin Resistant CoNS with a MIC>= 32 µg/ml.

The ISDH Laboratories will accept isolates of CoNS with a MIC>= 32 µg/ml after the submitting laboratory has rechecked the isolate identification and the vancomycin MIC (if possible use a non-automated method).

Training Room

INDIANA STATE DEPARTMENT OF HEALTH IMMUNIZATION PROGRAM PRESENTS:

Immunizations from A to Z

Immunization and Health Educators offer this FREE, one-day educational course that includes:

- Principles of Vaccination
- Childhood and Adolescent Vaccine-Preventable Diseases
- Adult Immunizations
  - Pandemic Influenza
- General Recommendations on Immunization
  - Timing and Spacing
  - Indiana Immunization Requirements
  - Administration Recommendations
  - Contraindications and Precautions to Vaccination
- Safe and Effective Vaccine Administration
- Vaccine Storage and Handling
- Vaccine Misconceptions
- Reliable Resources

This course is designed for all immunization providers and staff. Training manual, materials, and certificate of attendance is provided to all attendees.
Please see the Training Calendar for presentations throughout Indiana. Registration is required.
To attend, schedule/host a course in your area or for more information, please contact
Beverly Sheets at 317-502-5722 or hepbbev@aol.com
http://www.in.gov/isdh/programs/immunization.htm

Mark your calendars NOW!

Indiana Immunization Fall Awards Conferences:

When: **Sunday, Oct. 2, 2005,** "Reception with Speakers"
Monday, Oct. 3, 2005, "Conference"
Time: 8:30 am to 3:30 pm
Where: Indianapolis Hilton, downtown

Speakers: William Atkinson, MD, MPH
Information, Education and Partnership Branch National Immunization Program
Centers for Disease Control and Prevention

Patricia Stinchfield, RN, CNP
The Children's Immunization Project
St. Paul, Minnesota
(Newest member of the ACIP)

Check out the new ISDH Immunization Program Web site at
http://www.in.gov/isdh/programs/immunization.htm.

PANDEMIC INFLUENZA TRAINING UPDATE

Pandemic Influenza Preparedness
Tuesday, October 4, 2005
8:00 am to 12:30 pm
Light Breakfast 7:30 am
Hilton Downtown
Monument Ballroom

The Indiana State Department of Health Pandemic Influenza Planning Committee, in collaboration with the ISDH Immunization Program, will host a "Pandemic Influenza Preparedness" educational session on Tuesday, October 4, 2005, 8:00 AM to 12:30 PM.

Keynote Speaker: William Atkinson, MD, Education, Information and Partnership Branch, National Immunization Program, Centers for Disease Control and Prevention. Please plan to register and attend this important and timely educational offering.

Pre-registration will be required due to space limitations. Send name, address, phone number, and e-mail address to: Beverly Sheets at hepbbev@aol.com, or fax at 317-257-2135. You may also send registration information to Janet Archer, at jarcher@isdh.state.in.us, or fax at 317-234-3723.

Mark your calendars NOW!
Indiana Immunization Fall Awards Conferences: Sunday, Oct. 2, 2005 will be a "Reception with Speakers" Monday, Oct. 3, 2005 will be the "Conference"
Indianapolis Hilton downtown. Speakers: Wm. Atkinson, MD, MPH, Information, Education and Partnership Branch National Immunization Program and Patricia Stinchfield, RN, CNP, The Children's Immunization Project, St. Paul, Minn. Newest member of the ACIP. 8:30 AM to 3:30 PM.

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.in.gov/isdh/dataandstats/data_and_statistics.htm

HIV/STD Quarterly Reports (1998-June 05)	Indiana Mortality Report (1999, 2000, 2001, 2002, 2003)
Indiana Cancer Incidence Report (1990, 95, 96, 97, 98)	Indiana Infant Mortality Report (1999, 2002, 2003)
Indiana Cancer Mortality Report (1990-94, 1992-96)	Indiana Natality Report (1998, 99, 2000, 2001, 2002, 2003)
Combined Cancer Mortality and Incidence in Indiana Report (1999, 2000, 2001, 2002)	Indiana Induced Termination of Pregnancy Report (1998, 99, 2000, 2001, 2002, 2003)
Indiana Health Behavior Risk Factors (1999, 2000, 2001, 2002)	Indiana Marriage Report (1995, 97, 98, 99, 2000)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter (9/2003, 10/2003, 6/2004, 9/2004, 4/2005, 7/2005)	Indiana Infectious Disease Report (1997, 98, 99, 2000, 2001)
Indiana Hospital Consumer Guide (1996)	Indiana Maternal & Child Health Outcomes & Performance Measures (1990-99, 1991-2000, 1992-2001, 1993-2002)
Public Hospital Discharge Data (1999, 2000, 2001, 2002, 2003)	

HIV Disease Summary

Information as of July 31, 2005 (based on 2000 population of 6,080,485)

HIV - without AIDS to date:

362	New HIV cases from August 2004 thru July 2005	12-month incidence	5.95 cases/100,000
3,598	Total HIV-positive, alive and without AIDS on July 31, 2005	Point prevalence	59.18 cases/100,000

AIDS cases to date:

375	New AIDS cases from August 2004 thru July 2005	12-month incidence	6.17 cases/100,000
3,752	Total AIDS cases, alive on July 31, 2005	Point prevalence	61.71 cases/100,000
7,661	Total AIDS cases, cumulative (alive and dead)		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in July *MMWR* Weeks 27-30		Cumulative Cases Reported January-July *MMWR* Weeks 1-30	
	2004	2005	2004	2005
Campylobacteriosis	39	81	174	200
Chlamydia	1,282	1,467	10,279	11,365
E. coli O157:H7	3	5	20	27
Hepatitis A	5	1	29	25
Hepatitis B	4	2	20	17
Invasive Drug Resistant *S. pneumoniae* (DRSP)	12	19	98	141
Invasive pneumococcal (less than 5 years of age)	2	7	24	46
Gonorrhea	481	642	3,580	4,534
Legionellosis	9	1	23	10
Lyme Disease	1	4	5	10
Measles	0	33	0	33
Meningococcal, invasive	2	1	14	14
Pertussis	12	28	52	174
Rocky Mountain Spotted Fever	0	0	4	0
Salmonellosis	31	97	236	272
Shigellosis	0	4	93	39
Syphilis (Primary and Secondary)	5	3	35	39
Tuberculosis	3	8	71	76
Animal Rabies	1 (bat)	3 (bats)	5 (4 bats, 1 skunk)	7 (bats)

For information on reporting of communicable diseases in Indiana, call the *ISDH Epidemiology Resource Center* at 317-233-7125.

Indiana
Epidemiology
Newsletter

The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community.